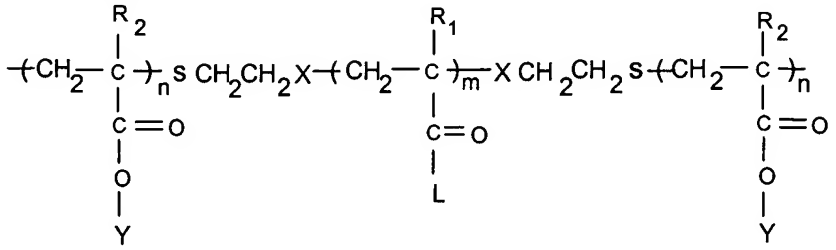
Abstract

The present invention relates to tri-block copolymers of molecular weight ranging between 2,000 Daltons to 2,00,000 Daltons having formula (1), having extraordinarily high binding strength,



Formula (1)

wherein,

R_1 is H, CH_3, C_2H_5, or C_6H_5; R_2 is H, CH_3, C_2H_5, or C_6H_5; X is an ester or amide linkage; m is ranging from 3 to 500; n is ranging from 2 to 50; L is OH, NH_2,OCH_3, or $NHCH(CH_3)_2$; Y is *N*-Acetyl Glucosamine, mannose, galactose, sialic acid, fructose, ribulose, erythrolose, xylulose, psicose, sorbose, tagatose, glucopyranose, fructofuranose, deoxyribose, galactosamine, sucrose, lactose, isomaltose, maltose, cellobiose, cellulose, or amylose, a simple and effective process for the preparation of the tri-block copolymers of formula (1), and a method of preventing and/or treating microbial infections, wherein the said method comprises steps of exposing the microbe to the tri-block copolymer of formula 1, and thereafter, binding of the polymer to the microbe inhibits the microbial infection.